

DISCOVERY OF *JUNCUS VASEYI* (JUNCACEAE)  
IN VERMONT

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ABSTRACT

*Juncus vaseyi* is an addition to the native flora of Vermont. A small population is vulnerable to human activities and natural succession in the Lake Champlain Valley of northwestern Vermont. It is recommended for state endangered species status.

Key Words: endangered species, *Juncus vaseyi*, Biosphere Reserve, Lake Champlain, Vermont

*Juncus vaseyi* Engelm., Vasey's rush, occurs across Canada and the northern United States. A new station in Vermont fills a gap in the southeastern limit of its range between Maine (Fernald, 1950; Bean et al., 1966), New York (unvouchered reports, Fernald, 1904; Clemants, 1990), and Michigan (Voss, 1972).

*Juncus vaseyi* is both rare and cryptic, and not surprisingly, there are no prior records in Vermont (Seymour, 1969, 1982; Atwood et al., 1973). In nature the plants are large but inconspicuous, resembling at a distance the abundant pasture rush, *Juncus effusus* L. The writer visited the Ferrisburg site several times before noticing *J. vaseyi* mixed among *J. effusus*.

A small population of *Juncus vaseyi* (Zika 10886 NY, VT) was discovered in a damp meadow along an ephemeral watercourse at an elevation of 110 feet on a bluff overlooking Button Bay, Lake Champlain. The poorly drained soil conceals the bedrock, which according to Doll (1961) is either Ordovician calcareous shale (Stony Point formation) or limestone (Hortonville formation). The habitat is dominated by a diversity of native monocots with a scattering of weedy forbs and invading shrubs, including *Calamagrostis canadensis* (Michx.) Beauv., *Carex annectens* (Bickn.) Bickn., *C. buxbaumii* Wahlemb., *C. conoidea* Schkuhr ex Willd., *C. lanuginosa* Michx., *C. scoparia* Schkuhr ex Willd., *C. tenera* Dewey, *Chrysanthemum leucanthemum* L., *Cornus foemina* Mill. ssp. *racemosa* (Lam.) J. Wils., *Fragaria virginiana* Mill., *Galium* sp., *Juncus dudleyi* Wieg., *J. effusus* L., *Panicum boreale* Nash., *Poa pratensis* L., *Ranunculus acris* L., and *Stellaria graminea* L.



The station is located adjacent to a campground in Button Bay State Park, Ferrisburg, Addison Co. The park is within the Champlain-Adirondack Biosphere Reserve. Among the rare species documented in the park are some state threatened or endangered species (Thompson, 1989), including *Carex buxbaumii* (Zika, 1988), *Cypripedium arietinum* R. Br., *Pterospora andromedea* Nutt. (No collector cited s.n. NY), and *Sporobolus asper* (Zika, 1990). *Sporobolus asper* is rare across New England (Rawinski et al., 1989). Despite repeated searches, *P. andromedea* has not been seen since 1892 at Button Bay and is believed extirpated from the park. *Carex buxbaumii* inhabits the same wet meadow as *Juncus vaseyi*.

The *Juncus vaseyi*-*Carex buxbaumii* habitat appears to be a fragmented remnant of an extensive seasonal wetland dominated by native monocots. The site was altered by agriculture before it became a park. Trees were removed and the watercourse was partially channelized in an apparently unsuccessful attempt to dry out the meadows, which were mowed regularly. The park filled part of the wet meadows to install roads and campsites, eliminating considerable habitat and further altering the hydrology of the site. Shrubs are now invading the meadow.

Why is *Juncus vaseyi* rare at the site? Most of the available habitat was altered by farming or by construction activities when the park was developing facilities. Why is Vasey's rush rare regionally? This is the first report for the Champlain Valley of New York and Vermont. Presumably *J. vaseyi*, an early successional species, was quite rare prior to European settlement in this heavily forested area. It would have been restricted to damp natural openings, perhaps abandoned beaver meadows or wetlands in recently burned pine stands in the Champlain Valley. The absence of prior records implies it was always rare. Presumably increases in available habitat (agricultural clearings) were offset by increased competition from introduced hay species, draining, or dispersal and recruitment difficulties at the southern limit of the species range. Champlain Valley wetlands continue to be altered by agriculture and development, further limiting the available habitat.

The *Juncus vaseyi* population is threatened by possible expansion of facilities in this popular park. Natural succession is also a threat to the small and vulnerable station. The apparent extirpation of *Pterospora andromedea* from Button Bay emphasizes the need for legal protection and careful management of botanical



resources in the state park. *Juncus vaseyi* is recommended for state endangered species status (10 V. S. A. Chapter 123).

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#### LITERATURE CITED

- ATWOOD, J. T., W. D. COUNTRYMAN, R. A. JERVIS, D. H. MILLER, F. C. SEYMOUR AND M. L. SMITH. 1973. Check List of Vermont Plants. Vermont Bot. and Bird Club, Burlington.
- BEAN, R. C., C. D. RICHARDS AND F. HYLAND. 1966. Revised Check-list of the Vascular Plants of Maine. Josselyn Bot. Soc. Maine, Bull. 8.
- CLEMANTS, S. E. 1990. Juncaceae (Rush Family) of New York State. New York State Museum, Bull. 475, Albany.
- DOLL, C. G. 1961. Centennial Geologic Map of Vermont. Vermont Geological Survey, Montpelier.
- FERNALD, M. L. 1904. Preliminary lists of New England plants, XIII. *Rhodora* 6: 34–41.
- . 1950. Gray's Manual of Botany, 8th ed. American Book Co., New York.
- RAWINSKI, T.J., M. N. RASMUSSEN AND S. C. ROONEY. 1989. Discovery of *Sporobolus asper* (Poaceae) in Maine. *Rhodora* 91: 220–221.
- SEYMOUR, F. C. 1969. The Flora of Vermont. Vermont Agric. Exp. Sta. Bull. 660, Burlington.
- . 1982. The Flora of New England, 2nd ed. Phytologia Memoirs V, Plainfield, NJ.
- THOMPSON, E. 1989. Vermont's Rare, Threatened and Endangered Plant Species. Vermont Natural Heritage Program, Waterbury.
- VOSS, E. G. 1972. Michigan Flora. Part I. Gymnosperms and Monocots. Cranbrook Inst. of Science and Univ. of Michigan Herbarium, Bloomfield Hills, MI.
- ZIKA, P. F. 1988. Contributions to the flora of the Lake Champlain Valley, New York and Vermont, II. Bull. Torrey Bot. Club 115: 218–220.
- . 1990. Range expansions of some grasses in Vermont. *Rhodora* 92: 80–89.

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